



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/804,022

03/19/2004

Tomoko Taguchi

008312-0308844

8904

909

7590

03/21/2007

PILLSBURY WINTHROP SHAW PITTMAN, LLP
P.O. BOX 10500
MCLEAN, VA 22102

EXAMINER

BLOUIN, MARK S

ART UNIT

PAPER NUMBER

2627

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
--	-----------	---------------

3 MONTHS

03/21/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/804,022	Applicant(s) TAGUCHI, TOMOKO	
	Examiner Mark Blouin	Art Unit 2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 December 2006.
 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) ☐ Claim(s) _____ is/are allowed.
 6) ☒ Claim(s) 1-10 is/are rejected.
 7) ☐ Claim(s) _____ is/are objected to.
 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Detailed Action

Response to Amendment

- The reply filed on December 12, 2006 was applied to the following effect: Applicant's arguments have been considered and are responded to below.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishida et al (US 2001/0017746) in view of Mallary (US 5,311,387).
3. Regarding Claims 1,2,6, and 7, Nishida et al shows (Fig. 8 – all structures are labeled) a magnetic disc apparatus, comprising: a double layered perpendicular recording medium (Fig. 10) comprising a soft magnetic underlayer and a perpendicular recording layer, which are formed on a substrate; and a perpendicular magnetic recording head comprising a main pole configured to generate a recording magnetic field in a perpendicular direction, and an auxiliary pole connected to the main pole on a leading and trailing side to the main pole, but does not show the auxiliary pole having a multilayered structure in which a nonmagnetic layer is sandwiched between magnetic layers, and a write shield arranged apart from the main pole on a trailing side to the main pole and having a multilayered structure in which a nonmagnetic layer is sandwiched between magnetic layers.

Mallory shows (Figs. 1 and 2) the auxiliary pole having a multilayered structure (Fig. 1a) in which a nonmagnetic layer (Aluminum Oxide) is sandwiched between magnetic layers (NiFeCo), and a write shield (Fig. 2 P3 – write/shield) arranged apart from the main pole on a trailing side to the main pole and having a multilayered structure in which a nonmagnetic layer is sandwiched between magnetic layers.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the auxiliary pole/shield structure of Nishida et al with the with the multi-layered structure as shown by Mallary. The rationale is as follows: One of ordinary skill in the art at the time the invention was made would have been motivated to replace the auxiliary pole/shield structure of Nishida et al with the with the multi-layered structure as shown by Mallary in order to improve signal sensitivity and reproduction quality.

4. Regarding Claims 3 and 8, Mallary shows (Fig.3) the magnetic disc apparatus according to, wherein the write shield has such a thickness that is thicker in each of edge portions than in a central portion (P/A and P/B sit on top of P/A creating thicker edges).

5. Regarding Claims 4 and 9, Mallary shows (Fig. 3) the magnetic disc apparatus according to, wherein the write shield has such a number of stacks of the magnetic layer and the nonmagnetic layer that is larger in each of edge portions than in a central portion (P/A and P/B sit on top of P/A creating thicker edges).

6. Regarding Claims 5 and 10, Mallary shows (Fig. 1a) the magnetic disc apparatus according to, wherein the auxiliary pole has a multilayered structure in which a nonmagnetic layer is sandwiched between magnetic layers.

Response to Arguments

7. Applicant's arguments filed December 12, 2006 have been fully considered but they are not persuasive.

- Applicant asserts on page 3 that Nishida does not show an auxiliary pole that trails the main pole and no write shield is shown.

The Examiner maintains that Nishida shows in Figure 8, an auxiliary pole (right of the main pole) that trails the main pole. Also, with regard to a trailing write shield, it is well known in the art that auxiliary poles function as write shields as shown by Mallery in Figure 2 (P1 and P3).

- Applicant asserts on page 4 that the combination of Nishida and Mallery is not obvious and that the combined structure is not an equivalent structure and therefore would not function as such.

The Examiner maintains that both Nishida and Mallery provide structures that generate magnetic flux to write to a magnetic recording medium. Both structures have a main pole and auxiliary (or return) pole to conduct a magnetic flux through the magnetic recording medium in a particular direction. In addition, the need for a write shield is shown in both prior art and is provided on the trailing side of the main pole. The Examiner maintains that both structures are equivalent and therefore would perform the same function and it would be obvious to combine equivalent structures to write to a magnetic recording medium.

Therefore, the rejection of Claims 1-10 is upheld.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

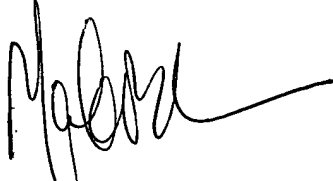
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Blouin whose telephone number is 571-272-7583. The examiner can normally be reached on M-F from 6:00 to 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ms. Hoa Nguyen, can be reached on 571-272-7579. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

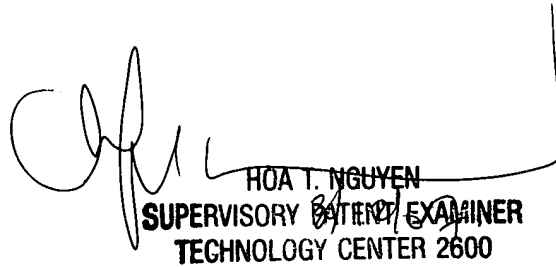
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

Art Unit: 2627

system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Mark Blouin
Patent Examiner
Art Unit 2627
March 6, 2007



HOA T. NGUYEN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600